

MOTOR CONTROL CIRCUIT WITH ADAPTIVE DYNAMIC RANGE SELECTION

Abstract of the Disclosure

Method and apparatus for controlling a motor. A digital to analog converter (DAC) converts input digital values to corresponding analog voltages over a range of different selectable dynamic operating ranges. A first motor adjustment signal within a first dynamic range of the DAC is generated in relation to a velocity error of the motor, and applied to the DAC to control flow of current through the motor. The DAC is adjusted to a different, second dynamic range when the first motor adjustment signal is proximate an upper end or a lower end of the first dynamic range. Expanding the dynamic range allows greater amounts of current to be applied to the motor; contracting the dynamic range provides higher resolution (volts/count) and greater stability. The different ranges are automatically selected for different motor load conditions.